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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/055,468	01/23/2002	Howard Thomas	2A09.1-021	6379

7590 05/20/2003

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EXAMINER

SINGH, ARTI R

ART UNIT	PAPER NUMBER
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1771

DATE MAILED: 05/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/055,468	THOMAS, HOWARD	
	<b>Examiner</b>	<b>Art Unit</b>	
	Ms. Arti Singh	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 January 2002.
- 2a) ☐ This action is **FINAL**.
- 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-52 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 & 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities:

It is noted that many non-US standards are described in the instant disclosure. It is suggested that Applicant provide a copy of these standards so that the Application file appears complete if the patent is to issue.

### *Claim Rejections - 35 USC § 102/103*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or sale in this country, more than one year prior to the date of application for patent in the United States.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-52 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over USPN 5,343,796 issued to Cordova et al. Cordova discloses body armor, such as ballistic vests, helmets, etc. comprising a first and second pliable, fibrous layers, wherein the second layer dissipates energy from impact by deformation (abstract). Said fibrous layers are taught to include random nonwoven fabrics (column 4, lines 50-55), which are bonded by needlepunching (column 11, lines 25-35). Preferred embodiments of the Cordova invention include fibers of high molecular weight polyethylene or polypropylene, polyvinyl alcohol, polyacrylonitrile and aramid fibers, or mixtures thereof (column 8, lines 43-49). One specific embodiment is taught to include a first

Art Unit: 1771

and a third layer of needlepunched nonwoven of polyethylene (SPECTRA®) and aramid (KEVLAR®) or a blend of the two fibers (column 14, lines 44-53). Each layer may be comprised of about 4 to 100 nonwoven webs (i.e. felt networks) (column 12, line 68- column 13, line 1). Preferable fiber lengths for the nonwoven fabric are taught to range from 2 to 6 inches (column 11, lines 13-24). Cordova also teaches that the nonwoven layers can be made by carding, cross-lapping and needlepunching (column 11, lines 25-35 and column 16, lines 3-16). The needlepunch density may range from 200 to 1800 punches per square inch (column 15, lines 64-65 and column 16, lines 28 and 33). With regard to the limitation of the fibers being upright and perpendicular to the plane of the fabric, to this the Examiner is of the opinion that since a nonwoven needlepunched fabric is being employed it would be inherent, if not obvious that random fibers would be found in every direction, and in every plane.

Hence, it can be seen that the cited Cordova patent teaches Applicant's claimed impact resistant material and structure thereof with the exception of the claimed upright fibers or the air permeability. Given that Cordova meet each and every chemical and structural requirement set forth in the claims, then it must meet the property limitations of air permeability depend from said requirements. In other words, it is reasonable to presume that the invention of Cordova would inherently anticipate the physical properties of the present invention, since both inventions are comprised of needlepunched nonwoven felts made from the same type of ballistic fibers.

Since no other structural or chemical features are claimed which may distinguish the present invention from that of the Cordova invention, the presently claimed physical properties of air permeability are deemed to be inherent to the invention of Cordova. The burden is upon Applicant to prove otherwise. Note *In re Fitzgerald* 205 USPQ 495.

With regard to the limitations of Claims 6, 7, 22, 23, 26, 37, 38, and 41 of fiber

Art Unit: 1771

denier, fiber fineness, and fiber strength Cordova teaches what is set forth above, but does not explicitly teach the exact denier or properties of said fibers. However, the Examiner takes Official Notice that it is common and well known in the art that SPECTRA® fibers are available at a denier of about 5.5, while KEVLAR® aramid fibers are available at a denier of about 1.5. As such, it would have been obvious to a person having ordinary skill in the art at the time the invention was made in the art to have utilized said fibers having the presently claimed deniers. Such a modification would have been motivated by the desire to produce a blended impact/ballistic resistant needlepunched nonwoven high density due to the fiber fineness.

Additionally, it should be noted that optimizing fiber strength or denier in a fabric are considered result effective variables. For example, optimizing the fabric denier for strength or stiffness or cover factor directly affect the strength of the fabric. Therefore, it would have been obvious for a person having ordinary skill in the art at the time the invention was made to have made the fabric of Cordova to have a fabric having fiber fineness, denier and the properties associated with it, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980). In the present invention, one would have optimized the fabric, motivated by the desire to obtain an impact/ballistic resistant fabric having increased strength and durability.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

USPN 4183985

USPN 5591933

USPN 5796028

USPN5958804

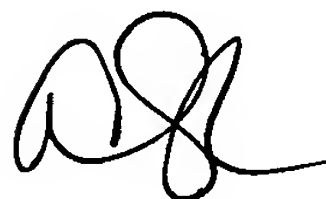
Art Unit: 1771

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ms. Arti R. Singh whose telephone number is 703-305-0291.

The examiner can normally be reached on M-F 7:00am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrell Morris can be reached on 703-308-2414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-873-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Ms. Arti R. Singh  
Patent Examiner  
Art Unit 1771

ars  
May 18, 2003